

AMENDMENTS TO THE CLAIMS

The following listing of the claims shall replace any prior listings of the claims in this application.

Listing of Claims:

1. (Currently Amended) A device for lighting at least one light emitting diode (LED) to be supplied with predefined minimum forward voltage and maximum current, comprising:
a battery having a voltage less than said predefined minimum forward voltage for supplying voltage to the light emitting diode,
a pulse generator for generating a cyclic pulse signal having predefined on-times and off-times,
a switch controlled by the pulse generator to be turned on during said on-times to short-circuit the light emitting diode and turned off during said off-times,
an inductive device for being charged when the switch is turned on and for increasing the forward voltage over the light emitting diode when the switch is turned off,
wherein the pulse generator is a pulse width modulation generator,
wherein the inductive device is a coil having an inductance defined by the number of light emitting diodes and their maximum current and voltage requirements as well as the available frequency of the pulse generator.
2. (Original) A device as claimed in claim 1, comprising a diode before the light emitting diode to prevent the voltage over the light emitting diode from going down to zero.
3. (Canceled).
4. (Original) A device as claimed in claim 1, wherein the cyclic pulse signal has a frequency from 0.1 kHz to 30 Mega hertz.
5. (Canceled).

6. (Original) A device as claimed in claim 1, wherein the switch is a MOS FET or an NPN bipolar.

7. (Original) A battery-supplied apparatus comprising a display and a device as claimed in claim 1 for backlighting said display.

8. (Currently Amended) A method of lighting at least one light emitting diode to be supplied with predefined minimum forward voltage and maximum current, comprising the steps of:
supplying a forward voltage to the light emitting diode, using a battery having a voltage less than said predefined minimum forward voltage,
using a pulse width modulator to generate a cyclic pulse signal having predefined on-times and off-times for controlling a switch to be turned on during said on-times to short-circuit the light emitting diode and turned off during said off-times,
charging an inductive device when the switch is turned on,
increasing the forward voltage over the light emitting diode when the switch is turned off so that said forward voltage gets higher than the minimum forward voltage,
wherein the inductive device is a coil having an inductance defined by the number of light emitting diodes and their maximum current and voltage requirements as well as the available frequency of the pulse generator.

9. (Currently Amended) A device ~~as claimed in claim 1~~ for lighting at least one light emitting diode (LED) to be supplied with predefined minimum forward voltage and maximum current, comprising:
a battery having a voltage less than said predefined minimum forward voltage for supplying voltage to the light emitting diode,
a pulse generator for generating a cyclic pulse signal having predefined on-times and off-times,
a switch controlled by the pulse generator to be turned on during said on-times to short-circuit the light emitting diode and turned off during said off-times,
an inductive device for being charged when the switch is turned on and for increasing the forward voltage over the light emitting diode when the switch is turned off,
wherein the pulse generator is a pulse width modulation generator,

wherein said device is adapted to regulate the current over the light emitting diode by pre-defining the timing of the pulse signal that determines the charge on the inductive device, wherein the maximum on-time keeps the current of the inductive device not higher than the maximum current allowed through the light emitting diode, and the off time is chosen so that the current on the inductive device will decrease to zero.

10. (Currently Amended) A method ~~as claimed in claim 8, further comprising:~~ of lighting at least one light emitting diode to be supplied with predefined minimum forward voltage and maximum current, comprising:

supplying a forward voltage to the light emitting diode, using a battery having a voltage less than said predefined minimum forward voltage,

using a pulse width modulator to generate a cyclic pulse signal having predefined on-times and off-times for controlling a switch to be turned on during said on-times to short-circuit the light emitting diode and turned off during said off-times,

charging an inductive device when the switch is turned on,

increasing the forward voltage over the light emitting diode when the switch is turned off so that said forward voltage gets higher than the minimum forward voltage,

regulating the current over the light emitting diode by pre-defining the timing of the pulse signal that determines the charge on the inductive device, wherein the maximum on-time keeps the current of the inductive device not higher than the maximum current allowed through the light emitting diode, and the off time is chosen so that the current on the inductive device will decrease to zero.